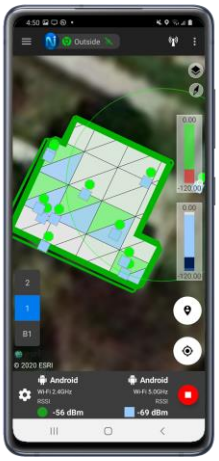
NEON® Signal Mapper

Geolocation for Indoor Signal Mapping



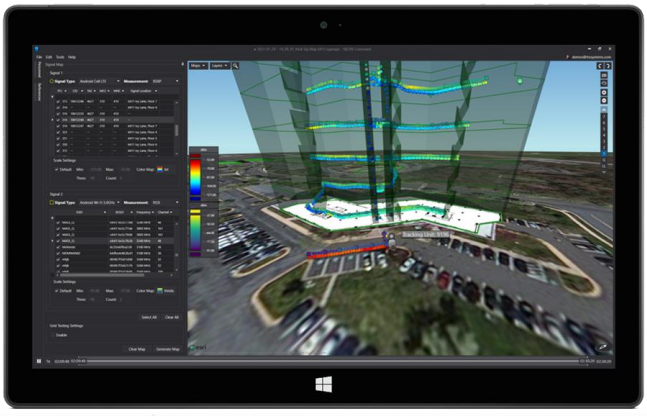
NEON® Signal Mapper delivers 3D mapping, tracking and visualization for indoor test and measurement applications where GPS is unavailable. NEON's ability to automatically locate and geo-reference users where GPS is not available simplifies and dramatically reduces the time required for indoor signal testing and documentation.

NEON Signal Mapper provides many benefits including:

- Eliminates manual "check-ins" at every test point
- Provides geo-referenced data with every step taken
- Removes location recording errors caused by "guesstimating"
- Delivers actionable data in areas not easily analyzed (stairways, elevators)
- Enables quick analysis of signal coverage and faster problem resolution
- Provides color-graded measurement results in 3D visualizer
- Grid Reporting simplifies IFC and NFPA compliance documentation

NEON Signal Mapper provides, for the first time, an automatic tracking technology that is specifically optimized for indoor test and measurement. Deployed with only a small, wearable accessory and an Android device, NEON is the ideal solution for professionals who conduct in-building testing of public safety and commercial networks, including public safety organizations, network operators, and indoor wireless network installers. NEON will be a key tool for engineers during the rollout and coverage verification of new networks such as FirstNet and other public safety LTE networks worldwide.

NEON Tracking Unit



Signal Mapper Command 3D Visualization

Key Features

3D Indoor Location Service

Android-Based NEON Location Service delivers real-time 3D location (X, Y, Z), error bounds and time stamp.

Rapid 3D Map Creation

Simple PC-based tool supports rapid creation of 3D building maps (including floor plan import if available).

API for simple integration

Interface for user developed custom Android signal mapping applications providing real-time NEON location data and allowing users to input constraints (e.g., initialization) through the custom application.

Cloud-based Logging

Location data stored in a cloud account allowing for access and export (e.g., of all time-stamped device location data between certain times).

Infrastructure Free

Deployed with only a NEON Tracking Unit and an Android handheld carried by the user - no pre-installed infrastructure.

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NEON
LOCATE. MAP. TRACK. INDOORS.

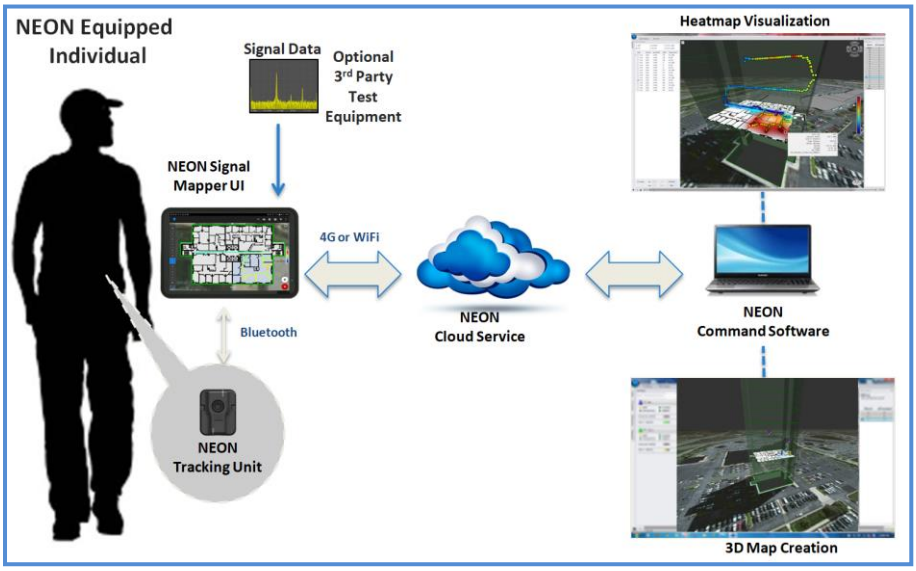
a product of TRX systems

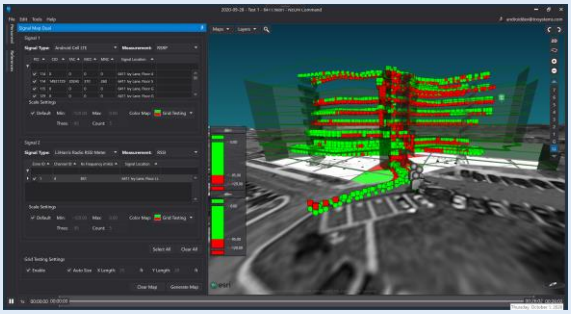
Patented, Easy to Use Technology

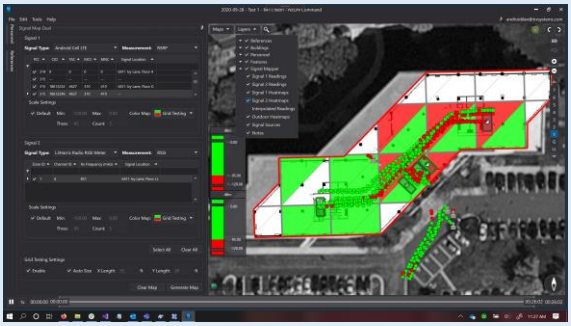
The NEON Signal Mapper Application leverages key parts of TRX's patented NEON Location Service including sensor fusion and mapping algorithms that enable real-time 3D location within buildings and other GPS-denied areas. For Signal Mapping, where only a single pass through the building is needed and interaction with the user is possible, ubiquitous 3D location inside and out is delivered using only intermittent check-ins and known map data, no preplanning or infrastructure is needed.

NEON Signal Mapper "Standard" is optimized for commercial and public safety LTE, Wi-Fi and BLE coverage mapping using standard, off-the-shelf Android devices.

NEON Signal Mapper "Pro" includes all Signal Mapper Standard capabilities plus advanced network performance testing and analysis through integration with third party test equipment from TRX partners.







Grid Reporting Feature

NEON Signal Mapper offers a grid reporting feature to enable building owners and radio engineers to more easily demonstrate compliance with National Fire Protection Agency (NFPA) and International Fire Code (IFC) requirements. NEON Signal Mapper is already used by engineers worldwide to automatically geo-reference two-way radio, cellular and Wi-Fi signals during performance testing of public safety and commercial networks inside buildings. With Grid Reporting enhancements, NEON Signal Mapper also dramatically reduces the time and cost to meet most local jurisdiction occupancy requirements where grid reporting is required.

Technical Data

NEON® Tracking Unit (NEON-TU8B)

Dimensions (H x W x D)	52 x 66 x 19mm (2.1 x 2.6 x 0.75in)
Operating Temperature	-20 to 60 °C (-4 to 140 °F)
Battery	Lithium Polymer, 10+ hours
Frequency	2.4GHz

Performance

Accuracy Metric	R95
Horizontal Error	<5 m
Vertical Error	+/-1 m

NEON Tracking Unit includes temperature compensated triaxial gyroscopes, triaxial accelerometer, magnetic sensor, and barometric pressure sensor. Overall location accuracy is affected by accuracy of initialization, frequency of user check-ins, sensor integrity, and map information.